

**Selected Research Publication Series of the
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Resource Publication

The *Resource Publication* series is a miscellaneous series for separately issued popular or instructional materials, lengthy reports, or material that requires numerous halftones or color illustrations. Typical subjects include guides, handbooks, manuals, historical reports, popular articles, bibliographies, and proceedings of nontechnical conferences or workshops. Several titles may be included under a single cover. Publications are usually typeset and have a standard size of 20 × 26 cm (7 7/8 × 10 1/4 in.). Intended audiences are research scientists, technically trained management personnel, and the lay public. The series was first issued in 1965.

1. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1965. National Wildlife Refuges, 1965. 23 pp.
Presents the development of National Wildlife Refuges, refuge management and maintenance, refuge publication offices, and pertinent recent (1965) legislation. Discusses the role of refuges in the management of waterfowl, threatened species, whooping cranes (*Grus americana*), and outdoor recreation. Provides a map of the United States showing the locations of refuges.
2. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1965. Fishery management services annual report for 1964. 47 pp.
Discusses the Division of Fishery Management Services programs with: 1) Federal areas and Indian Reservations, 2) military areas, 3) national forests, 4) national parks, and 5) Indian tribes. Describes additional cooperative studies dealing with 1) the Corps of Engineers aquatic plant control program, 2) pesticide surveillance on Interior, Indian, and other Federal lands, 3) flood damage in western Montana, and 4) an oil spill near Mochips, Washington.
3. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1965. Annual report for 1964, Cooperative Fishery Units. 32 pp.
Discusses Cooperative Fishery Units and their projects for 1964.
4. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1971. Sport fishing U.S.A. 464 pp.
Discusses the biology, behavior, and migrations of fish. Provides articles and personal accounts about fishing, techniques, fishermen, and different areas and types of fishing. Reviews the economics, problems, and future concerns of fishery management.
5. ANONYMOUS. 1965. Bird vs. aircraft. 11 pp.
Describes the conflicts between herring gull (*Larus argentatus*) populations and aircraft, and proposes a solution.
6. YEAGER, L. E. 1965. Thirty years of Cooperative Wildlife Research Units, 1935-1965. 34 pp.
Discusses the origin of cooperative units, their Congressional authority, administration, and support. Provides a list of units, cooperating State agencies, and leaders since each unit's establishment. Covers training and research activities, research opportunities, and how research results are made available. Shows how management agencies in 21 States have used unit work, and what the costs of unit research are.
7. HENEGAR, D. L. 1966. Minimum lethal levels of toxaphene as a piscicide in North Dakota lakes. 16 pp. [Also issued as *Investigations in Fish Control* 3]
To determine the minimum levels of toxaphene lethal to fishes in prairie lakes and reservoirs, 16 North Dakota lakes—ranging from 6.3 to 915 acres—were treated in 1959 and 1960 with concentrations of toxaphene ranging from 0.005 to 0.035 ppm. Physical and chemical studies were made of each area, hydrological maps were prepared, and test netting was carried out before and after treatment.
8. NEEDHAM, R. G. 1966. Effects of toxaphene on plankton and aquatic invertebrates in North Dakota lakes. 16 pp. [Also issued as *Investigations in Fish Control* 4]
The effects of low concentrations of toxaphene on plankton and larger invertebrates were studied in four North Dakota lakes (a fifth lake, untreated, was a control). *Brachionus*, *Keratella*, *Trichocerca*, *Asplanchna*, *Polyarthra*, *Conochiloides*, *Daphnia*, *Ceriodaphnia*, *Bosmina*, and *Cyclops* were dominant zooplankters.
9. WARNICK, D. C. 1966. Growth rates of yellow perch in two North Dakota lakes after population reduction with toxaphene. 9 pp. [Also issued as *Investigations in Fish Control* 5]
Growth rates of yellow perch (*Perca flavescens*) that survived a toxaphene treatment in Brush and

Long lakes in North Dakota were calculated by the scale method for the 1960 and 1961 growing seasons.

10. MAHDI, M. A. 1966. Mortality of some species of fish to toxaphene at three temperatures. 10 pp. [Also issued as *Investigations in Fish Control* 6]
Lethal concentrations of toxaphene were determined for the central stoneroller (*Camptostoma anomalum*), golden shiner (*Notemigonus crysoleucas*), goldfish (*Carassius auratus*), black bullhead (*Ictalurus melas*), and bluntnose minnow (*Pimephales notatus*) in water at 53, 63, and 73°F. Rainbow trout (*Salmo gairdneri*) were tested at 53°F. The TL_m and LD50 were obtained by graphic methods. For comparison a normit method was used with the bluntnose minnow data.
11. GAYLORD, W. E., AND B. R. SMITH. 1966. Treatment of East Bay, Alger County, Michigan, with toxaphene for control of sea lampreys. 7 pp. [Also issued as *Investigations in Fish Control* 7]
An experiment was conducted to determine whether toxaphene could be used to eradicate lake-dwelling sea lampreys (*Petromyzon marinus*) and to determine its effect on fish populations. In East Bay, a 78-acre lake on the Sucker River, Alger County, Michigan, an estimated concentration of 100 ppb was maintained for 14 days.
12. MEEHAN, W. R., AND W. L. SHERIDAN. 1966. Effects of toxaphene on fishes and bottom fauna of Big Kitoi Creek, Afognak Island, Alaska. 9 pp. [Also issued as *Investigations in Fish Control* 8]
Big Kitoi Creek, on Afognak Island, Alaska, was treated with toxaphene in July 1961 to remove sculpins (*Cottus aleuticus*) predaceous on pink salmon fry (*Oncorhynchus gorbuscha*). Dispersion and penetration of toxaphene into the streambed were determined, as well as time required for detoxification. Numbers, weight, recruitment, and species composition of bottom fauna, insects, and other invertebrate groups were also monitored.
13. WALKER, C. R., R. J. STARKEY, AND L. L. MARKING. 1966. Relation of chemical structure to fish toxicity in nitrosalicylanilides and related compounds. 12 pp. [Also issued as *Investigations in Fish Control* 9]
Relations between chemical structures of salicylanilides and benzanilides and their toxicity to rainbow trout (*Salmo gairdneri*) and goldfish (*Carassius auratus*) were evaluated in standard, static bioassays. Single and multiple substitutions of alkyl-, nitro-, and halo-groups were tested.
14. MARKING, L. L. 1966. Evaluation of *p,p'*-DDT as a reference toxicant in bioassays. 10 pp. [Also issued as *Investigations in Fish Control* 10]
p,p'-DDT was tested as a reference standard toxicant against 19 species of freshwater fish, including 39 lots from 10 sources. The rapidity, nonselectivity, and consistency of its toxicity to fish were evaluated in 96-h static bioassays.
15. SCHOETTGER, R. A., AND A. M. JULIN. 1966. Evaluation of an electronic method of measuring hematocrits of fish. 11 pp. [Also issued as *Investigations in Fish Control* 11]
Investigates 1) the comparability of YSI (Yellow Springs Instrument Company) electronic and centrifuge methods for measuring hematocrits in fish, 2) the reproducibility of electronic hematocrits, and 3) some physiological variables in fish blood that could influence conductivity—specifically, electrolyte and protein concentrations.
16. BUREAU OF SPORT FISHERIES AND WILDLIFE AND THE UNIVERSITY OF ALASKA, COOPERATORS. 1966. Proceedings of the first international scientific meeting on the polar bear. 72 pp.
Discusses polar bear (*Ursus maritimus*) biology and life history, and management and research in Canada, Greenland, Norway, U.S.S.R., and Alaska. Considers future and international research and management needs. Provides a list of participants and presents resolutions adopted at the meeting.
17. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1966. Progress in sport fishery research, 1965. 120 pp.
Describes fishery research efforts in the following areas: 1) pathology; 2) nutrition; 3) husbandry methods with trout, salmon, and warmwater species; 4) pesticide hazards and control; 5) reservoir and marine environments, and 6) genetics. Provides a list of publications, manuscripts in press, special reports, and useful addresses.
18. MARKING, L. L. 1967. Toxicity of MS-222 to selected fishes. 10 pp. [Also issued as *Investigations in Fish Control* 12]
Toxicity of MS-222 to rainbow trout (*Salmo gairdneri*), brown trout (*S. trutta*), brook trout (*Salvelinus fontinalis*), lake trout (*S. namaycush*), northern pike (*Esox lucius*), bluegill (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), and walleye (*Stizostedion vitreum*) of various sizes was determined in 15-, 30-, and 60-min and 24-, 48-, and 96-h static bioassays at selected temperatures. Safety indexes were calculated on the basis of the brief exposures.
19. SCHOETTGER, R. A., AND A. M. JULIN. 1967. Efficacy of MS-222 as an anesthetic on four salmonids. 15 pp. [Also issued as *Investigations in Fish Control* 13]
MS-222 was tested for its efficacy as an anesthetic for rainbow trout (*Salmo gairdneri*), brown trout (*S. trutta*), brook trout (*Salvelinus fontinalis*), and lake

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- trout (*S. namaycush*). Efficacy was determined according to fish size, pH, and water hardness.
20. WALKER, C. R., AND R. A. SCHOETTGER. 1967. Method for determining MS-222 residues in fish. 10 pp. [Also issued as *Investigations in Fish Control* 14] Describes and discusses a modified Bratton-Marshall method for detecting MS-222 in fish tissues.
21. WALKER, C. R., AND R. A. SCHOETTGER. 1967. Residues of MS-222 in four salmonids following anesthesia. 11 pp. [Also issued as *Investigations in Fish Control* 15] Residues of MS-222 (tricaine methanesulfonate) in the blood, muscle, liver, and kidney of rainbow trout (*Salmo gairdneri*), brown trout (*S. trutta*), brook trout (*Salvelinus fontinalis*), and lake trout (*S. namaycush*) were measured by a modified Bratton-Marshall colorimetric method. Temperatures were 7, 12, and 17°C in waters with total hardnesses of 10 to 180 ppm.
22. SCHOETTGER, R. A. 1967. Annotated bibliography on MS-222. 15 pp. [Also issued as *Investigations in Fish Control* 16] Contains 86 selected references on uses of MS-222 on cold-blooded animals including fish and amphibians. Most references are annotated.
23. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1966. Wildlife research: problems, programs, progress, 1965. 102 pp. Describes the Division of Wildlife Research programs and new (1965) research facilities in Denver, Colorado; Gainesville, Florida; and Jamestown, North Dakota. Discusses research highlights of 1965 in: 1) waterfowl management; 2) other migratory birds; 3) upland wildlife ecology; 4) pesticide-wildlife relations; 5) wildlife diseases and parasites; 6) animal control methods; 7) classification, distribution, and life history; 8) Cooperative Wildlife Research Units; 9) rare and endangered wildlife; and 10) extramural Division-financed research.
24. FORE, P. 1966. Cumulative subject and author index to *The Progressive Fish-Culturist*. 21 pp.
25. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1966. Annual report for 1965, Division of Fish Services. 54 pp. Reports on fishery management programs on Federal lands and Indian Reservations. Other cooperative projects include: 1) pesticide surveillance; 2) Mississippi River; 3) Truckee River Basin, Nevada; 4) Colorado River Storage Project, 5) Potomac River; 6) Merritt Reservoir, Nebraska; 7) South Dakota lakes; 8) coal mining operations' effects on fisheries; 9) East Tennessee project; 10) Susquehanna River; and 11) rare and endangered fishes. Briefly discusses cooperative fishery units, extension, and training.
26. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1966. Annual report for 1965, Cooperative Fishery Units. 69 pp. Provides unit locations and map of unit distribution. Describes objectives and training opportunities. Summarizes 1965 activities for 14 States. Lists unit personnel publications and papers.
27. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1966. National survey of fishing and hunting, 1965. 76 pp. Presents in graphs and in tables the results of an extensive survey. Data include number of anglers and hunters, their ages, favorite type of fishing and hunting, miles traveled, and expenditures. Briefly discusses how the survey was performed, and provides a statistical reliability analysis of the survey.
28. ANONYMOUS. 1966. American eagles and their economic status, 1964. 96 pp. Discusses the golden eagle (*Aquila chrysaetos*), its distribution, habitat, and food preferences. Examines golden eagle predation on rabbits, rodents, pronghorns (*Antilocapra americana*), deer, bighorn sheep (*Ovis canadensis*), upland game birds, waterfowl, domestic sheep, and cattle. Makes recommendations for management.
29. STEFFERUD, A., AND A. L. NELSON, EDITORS. 1966. Birds in our lives. 561 pp. Includes chapters on bird biology, birds in literature and art, birds in sports and recreation, ecology, husbandry, man's effects on birds, bird-human conflicts and possible solutions to those conflicts, and protective laws.
30. YEAGER, L. E., EDITOR. 1966. The making of a wildlifer: a symposium. 64 pp. Presents the following papers: 1) Wildlife and wildlife improvement; 2) Selection of students for graduate training in fisheries and wildlife; 3) Course work: basic, supporting, applied; 4) Training technicians and professionals for natural resources management; 5) What a State conservation department expects from a Cooperative Research Unit; 6) Giving wildlife employees professional opportunity; and 7) The "big needs" in wildlife research and training.
31. MALOY, C. R., AND H. WILLOUGHBY. 1967. Rearing marketable channel catfish in ponds. 4 pp. Discusses the following aspects of rearing channel catfish (*Ictalurus punctatus*) in ponds: 1) water supply, 2) holding facilities, 3) pond specifications, and 4) rearing procedures. Offers other sources of information and publications.
32. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. National Wildlife Refuges, 1966. 28 pp. Provides a map of the United States showing locations of National Wildlife Refuges, and lists new

- (1965) refuges. Discusses the refuges and Canada geese (*Branta canadensis*), Alaskan refuges, waterfowl production areas, birdwatching, endangered species, the Great Swamp refuge in New Jersey, products of refuge management, flood and storm damages, 1965 recreational use, and Job Corps Conservation Centers on refuges.
33. SCHOETTGER, R. A., C. R. WALKER, L. L. MARKING, AND A. M. JULIN. 1967. MS-222 as an anesthetic for channel catfish: its toxicity, efficacy, and muscle residues. 14 pp. [Also issued as *Investigations in Fish Control* 17]
MS-222 was tested as an anesthetic on channel catfish (*Ictalurus punctatus*). The influences of duration of exposure, size of fish, temperature, and water quality on toxicity, efficacy, and residues are discussed.
 34. COMMITTEE ON RARE AND ENDANGERED WILDLIFE SPECIES. 1966. Rare and endangered fish and wildlife of the United States. 157 pp.
Lists vertebrate animals that are considered rare or in danger of extinction. Includes mammals, birds, reptiles and amphibians, and fishes of the United States, the Commonwealth of Puerto Rico, and the Virgin Islands.
 35. WILLFORD, W. A. 1967. Toxicity of 22 therapeutic compounds to six fishes. 10 pp. [Also issued as *Investigations in Fish Control* 18]
Twenty-two therapeutic chemicals (18 parasiticides and 4 oral bacteriostats) were tested by bioassays for toxicity to fish. Tests were in 24- and 48-h static bioassays on rainbow trout (*Salmo gairdneri*), brown trout (*S. trutta*), brook trout (*Salvelinus fontinalis*), lake trout (*S. namaycush*), and bluegill (*Lepomis macrochirus*) at 12°C, and channel catfish (*Ictalurus punctatus*) at 17°C.
 36. MARKING, L. L., AND J. W. HOGAN. 1967. Toxicity of Bayer 73 to fish. 13 pp. [Also issued as *Investigations in Fish Control* 19]
Provides and discusses results of study on Bayer 73, a molluscicide sold commercially as Bayluscide, and its toxicity to 18 freshwater fish species. Various temperatures, water qualities and pH's were tested. Discusses biodegradability, efficacy, and relative safety of Bayer 73 in conjunction with its usefulness as a general fish toxicant.
 37. WILLFORD, W. A. 1967. Toxicity of dimethyl sulfoxide (DMSO) to fish. 8 pp. [Also issued as *Investigations in Fish Control* 20]
Toxicities of dimethyl sulfoxide (DMSO) to rainbow trout, (*Salmo gairdneri*), brook trout (*Salvelinus fontinalis*), lake trout (*S. namaycush*), carp (*Cyprinus carpio*), black bullhead (*Ictalurus melas*), channel catfish (*I. punctatus*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), and yellow perch (*Perca flavescens*) were determined in 24-, 48-, and 96-h static bioassays at 12°C. Toxicity was low, around 30 ppt.
 38. HESSELBERG, R. J., AND R. M. BURRESS. 1967. Labor-saving devices for bioassay laboratories. 8 pp. [Also issued as *Investigations in Fish Control* 21]
Three inexpensive pieces of labor-saving apparatus for bioassay laboratory use are described and illustrated. Construction features, material costs, and use of a jar rinser, automatic liquid measuring vessel, and jar emptier are discussed.
 39. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. Progress in sport fishery research, 1966. 195 pp.
Reports progress in research of fish ecosystems, fish husbandry, pest control, and pesticide pollution. Provides a list of recent publications, manuscripts in press, special reports, and useful addresses.
 40. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. Division of Fishery Services, annual report for 1966. 55 pp.
Describes fishery management programs in Federal areas and Indian Reservations. Briefly discusses Cooperative Fishery Units, cooperation with the Division of Fish Hatcheries, and a national survey of needs for hatchery fish. Additional cooperative projects discussed are: 1) pesticide field appraisal, 2) aquatic plant control, 3) Federal Water Pollution Control Administration, 4) Upper Mississippi River Conservation Committee, 5) East Tennessee Management Project, 6) Colorado River Storage Project, and 7) rare and endangered fishes.
 41. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. Annual report for 1966, Cooperative Fishery Units. 80 pp.
Updates *Resource Publication* 26 (1966). Includes programs in 23 States.
 42. ANONYMOUS. 1967. 15 years of better fishing: fish restoration program. 32 pp.
Tests were conducted with both tap and pond waters in aquariums and with stream water in plastic-lined pools to determine whether manipulation of hydrogen-ion concentration of the water could be used to selectively kill bluegills (*Lepomis macrochirus*) in farm-pond fish populations consisting of bluegills and largemouth bass (*Micropterus salmoides*). The pH was changed by adding hydrochloric acid, acetic acid, sodium hydroxide, and calcium hydroxide; tests were carried out in the pH range of 3.3 to 11.2.
 43. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. Wildlife research: problems, programs, progress, 1966. 117 pp.
Updates *Resource Publication* 23 (1966).

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44. HOTCHKISS, N. 1967. Underwater and floating-leaved plants of the United States and Canada. 124 pp.
Describes all of the wild flowering plants, ferns, liverworts, and Characeae in which the foliage is habitually underwater or floating, and all those which have underwater or floating-leaved forms, and which, at the same time, have characteristics by which a person can tell them apart with the naked eye.
45. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1967. National Wildlife Refuges, 1967. 16 pp.
Describes the National Wildlife Refuge system and provides a list of new (1966) refuges and a map of the refuge system. Discusses refuges and endangered species, The Endangered Species Preservation Act, refuge wildernesses, colonial birds and island refuges, 1966 recreational uses, soil and moisture conservation, and Job Corps Conservation centers.
46. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Denver Wildlife Research Center. 24 pp.
Describes research in the following areas: 1) bird pests, 2) mammal pests, 3) rodents, 4) coyote (*Canis latrans*) control, 5) golden eagles (*Aquila chrysaetos*), 6) safer pesticides, 7) foreign country aid, 8) botulism in waterfowl, and 9) birds and mammals on public lands.
47. BUREAU OF SPORT FISHERIES AND WILDLIFE. n.d. Fish and wildlife programs, 1968. 20 pp.
Discusses the role of Bureau of Sport Fisheries and Wildlife programs in recreational use, national fish hatchery production, waterfowl use days, and economic and social benefits.
48. DEVANEY, T. E. 1968. Chemical vegetation control manual for fish and wildlife management programs. 42 pp.
Discusses the use of herbicides and provides herbicide information sheets for various herbicides, describing chemical, physical, and biological properties of the herbicides. Gives common names for chemicals used with herbicides. Lists herbicides registered in accordance with The Federal Insecticide, Fungicide, and Rodenticide Act for use in aquatic sites.
49. BUMP, G. 1968. Foreign game investigations; a Federal-State cooperative program. 14 pp.
Describes the foreign game introduction program. Discusses the need for the program, early introductions, and 26 species of game birds recommended for introduction. Offers current status of introductions already accomplished.
50. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Sierra Nevada Aquatic Research Laboratory. 2 pp.
Descriptive brochure.
51. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Tiburon Marine Laboratory. 2 pp.
Descriptive brochure.
52. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. The Salmon-Cultural Laboratory. 2 pp.
Descriptive brochure.
53. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Atlantic marine game fish research, Sandy Hook Marine Laboratory, Narragansett Marine Game Fish Laboratory. 8 pp.
Brochure; describes the Sandy Hook Marine Laboratory, New Jersey, and the Atlantic Coast research program.
54. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Bear River Migratory Bird Refuge, a visitor information booklet and tour guide. 22 pp.
55. ANONYMOUS. 1968. Suitability of the Susquehanna River for restoration of shad. 60 pp.
Discusses the administrative committee and reports the biological findings: 1) studies of American shad (*Alosa sapidissima*) egg and larval stages (1963-65), 2) studies of young shad (1963-65), and 3) studies of adult shad. Discusses water quality, availability of food, availability of suitable substrate for egg development, shad emigration hazards, and adult shad behavior.
56. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. This is a salmon hatchery helping to maintain important sport and commercial fisheries. 8 pp.
Describes salmon, their biology, and the processes of a salmon hatchery.
57. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. This is a trout hatchery, operated by Bureau of Sport Fisheries and Wildlife to help manage our sport fishery resources and provide recreation for millions of Americans. 8 pp.
Describes trout life history and hatchery procedures.
58. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. This is a pondfish hatchery, operated by Bureau of Sport Fisheries and Wildlife to help manage our sport fishery resources and provide recreation for millions of Americans. 8 pp.
Descriptive brochure.
59. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Six questions everybody asks at National Fish Hatcheries. 2 pp.
Brochure; discusses breeding, stocking, and feeding.
60. MCGILREY, F. B. 1968. A guide to wood duck production habitat requirements. 32 pp.
Brochure; describes the requirements for breeding habitat and brood-rearing habitat. Discusses

factors that limit habitat, nest boxes, and research needs. Includes list of references.

61. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Division of Fishery Services, annual report for 1967. 56 pp.
Discusses fishery management programs on Federal areas and Indian reservations. Other cooperative projects include: 1) effects of mineral mining in fisheries; 2) water quality standards; 3) pesticide field appraisal, monitoring, and research; 4) aquatic weed control; 5) coordination projects; 6) Dale Hollow Reservoir investigations; and 7) Colorado River storage projects. Reports on a national survey of needs for hatchery fish and on cooperative fishery units.
62. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Annual report for 1967, Cooperative Fishery Units. 63 pp.
Updates *Resource Publication* 41 (1967).
63. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. State by State summaries: national survey of needs for hatchery fish, Parts 1 and 2. 71 pp. (part 1) and various pagings (part 2).
Presents the results of a survey conducted in 1966 on 1) amount and type of sport-fish habitat, 2) amount and type of habitat stocked, 3) number and type of fishermen, 4) stocking requirements, and 5) hatchery fish production capabilities. Part 1 discusses the survey on nationwide basis; Part 2 discusses the survey State by State.
64. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Progress in sport fishery research 1967. 220 pp.
Reports on progress in the Division of Fishery Research in the following areas: 1) fish husbandry research, 2) pest control research, and 3) oceanic and reservoir ecosystems and fish research. Lists publications, manuscripts in press, special reports, and useful addresses.
65. BOCCARDY, J. A., AND W. M. SPAULDING, JR. 1968. Effects of surface mining on fish and wildlife in Appalachia. 20 pp.
Describes the history of Appalachian surface mining, the extent and nature of disturbed areas, the effects of such mining on fish and wildlife, and esthetics. Discusses the existing conditions in Alabama, Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. Mentions reclamation accomplished and provides general recommendations.
66. MEYER, F. P. 1968. Treatment tips: how to determine quantities for chemical treatments in fish farming. 17 pp.
67. DEUEL, D. G., AND J. R. CLARK. 1968. The 1965 salt-water angling survey. 51 pp.
Reports the results of a 1965 survey of salt water anglers regarding species caught, number and average weight of fish caught, geographical region, principal area, and method of fishing. Critiques the methods of survey, classifies species groups, and provides an index of common names.
68. ANONYMOUS. n.d. Effects of surface mining on the fish and wildlife resources of the United States. 51 pp.
Discusses survey techniques; the history, types, extent, and location of surface mining; and ownership of surface-mined lands. Describes changes in fish and wildlife habitat—specifically physical changes in the land, in water quality and quantity, and in biology. Reports on past reclamation and makes recommendations.
69. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. The right to exist: a report on our endangered wildlife. 12 pp.
Describes extinction and mentions specific examples of endangered mammals, birds, and fish. Discusses the new (1970) endangered species program, cooperative programs, regulations, education, and economics of endangered species.
70. HEWSTON, J. G., AND D. R. FRANKLIN. 1969. Recreational use patterns at Flaming Gorge Reservoir, 1963–65. 80 pp.
Activities, characteristics, and satisfactions of recreationists at Flaming Gorge Reservoir, Utah–Wyoming, were studied in 1963–1965. Data were collected from interviews, questionnaires, creel censuses, and administrative agency records. Activities included sightseeing and rainbow trout (*Salmo gairdneri*) fishing.
71. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. National Wildlife Refuges, 1968. 16 pp.
Describes National Wildlife Refuge System and lists new (1967) refuges. Discusses waterfowl, game, wildlife, and endangered species on refuges. Reports on research, special programs, administration, and publications of refuges.
72. GREENHALL, A. M., AND J. L. PARADISO. 1968. Bats and bat banding. 47 pp.
Seeks to standardize bat-banding procedures and to stimulate public interest. Discusses history of bat banding, bat roost location, collection methods, holding cages, banding techniques, health hazards, data, and recording data. Recovery and preservation information, and a checklist of North American bats are provided.
73. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1968. Laboratories for fish disease research. Brochure; describes laboratories and research in general. 8 panels.

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74. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1969. Wildlife research: problems, programs, progress, 1967. 104 pp.
Updates *Resource Publication* 43 (1967). Includes birdbanding research.
75. ANONYMOUS. 1969. Whooping cranes. 100 pp.
Describes whooping cranes (*Grus americana*), their biology and life history, and research efforts.
76. ANONYMOUS. 1969. Parasites and diseases of warm-water fishes. 20 pp.
Presents some of the more common parasites and diseases of fish in fish farming reservoirs.
77. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1969. Progress in sport fishery research, 1968. 259 pp.
Reports progress by the Division of Fishery Research in the following areas: 1) oceanic and reservoir ecosystem research, 2) pest control research, and 3) fish husbandry research. Provides list of publications, manuscripts in press, special reports, and useful addresses.
78. SHARPE, F. P., AND W. T. BURKHARD. 1969. A light-weight backpack high-voltage electrofishing unit. 8 pp.
Describes lightweight portable equipment for collecting fish in almost inaccessible high mountain streams. The equipment includes a lightweight variable-voltage pulsating unit, a 110-V generator, a pack frame for mounting the equipment, and electrodes. Discusses the application and advantages of such equipment.
79. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1969. Division of Fishery Services: annual report for 1968. 60 pp.
Describes and discusses fishery management programs on Federal areas, on Indian Reservations, with Cooperative Fishery Units, and in cooperation with the Division of Fish Hatcheries. Other cooperative projects include: 1) pesticide monitoring and appraisal, 2) effects of mineral mining on fisheries, 3) coordination projects, 4) Dale Hollow Reservoir investigation, 5) Choctawhatchee Bay striped bass study, and 6) rare and endangered fishes.
80. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1969. Cooperative Fishery Unit report for the period January 1968 through June 1969. 80 pp.
Describes studies of 23 State Cooperative Fishery Units.
81. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1969. The Western Fish Nutrition Laboratory. 2 pp.
Describes the laboratory and its research.
82. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. National Wildlife Refuges, 1969. 8 pp.
Lists new (1968) National Wildlife Refuges and discusses waterfowl production areas, environmental interpretation, visitors, and products of refuge management. Mentions the Great Swamp National Wildlife Refuge wilderness area in New Jersey.
83. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. Report to the fish farmers. 123 pp.
Presents an account of production and farming of food fish, bait fish, sport fish, and crayfish. Explains techniques, pertinent research, effects of research on fish farming, and future research needs. Provides a publication list.
84. TUCKER, R. K., AND D. G. CRABTREE. 1970. Handbook of toxicity of pesticides to wildlife. 131 pp.
Acute toxicity data and a list of common symptoms observed are presented for each of 108 pesticides. For some, results of 30-day repeated oral toxicity or feeding tests are also included.
85. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. Wildlife research: problems, programs, progress, 1968. 112 pp.
Updates *Resource Publication* 74 (1969). Includes sections on continuing research activities: 1) Cooperative Wildlife Research Units; 2) *Wildlife Review*; 3) birdbanding; 4) electronic data processing; 5) Bureau museum collection; 6) bat banding; and 7) identification services.
86. EVANS, J. 1970. About nutria and their control. 65 pp.
Describes nutria (*Myocastor coypus*), their history, biology, and reproduction. Discusses mortality and the sugarcane and rice damage problems. Explains when, where, and how to control nutria. Methods include chemical control (zinc phosphide), shooting, kill-trapping, live trapping, draining and grading, and vegetation control. Briefly discusses positive and negative values of nutria and competition with muskrats (*Ondatra zibethica*).
87. ALDRICH, J. W. 1970. Review of the problem of birds contaminated by oil and their rehabilitation. 23 pp.
Reviews: 1) history and scope of contamination, 2) methods of cleaning oiled birds, 3) toxicological and physiological effects of oil and related stresses on birds, 4) care of cleaned oiled birds, and 5) inducing premature molt in birds. Includes reference list.
88. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. Progress in sport fishery research, 1969. 284 pp.
Reports progress by the Division of Fishery Research in the following research areas: pest control, animal husbandry, and oceanic and reservoir ecosystems. Includes current (1970) list of technical communications.

89. WEBB, R. T., AND F. R. RICHARDSON. 1970. Division of Fishery Services: annual report for 1969. 56 pp.
Discusses fishery management programs on Federal areas, on Indian Reservations, with Cooperative Fishery Units, and with the Division of Fish Hatcheries. Describes pesticide field appraisal, monitoring, and research, and coordination projects. Summarizes fishery services in 15 tables.
90. KINNEY, E. C. 1970. Cooperative Fishery Unit report for the 1969-1970 school year. 60 pp.
Updates *Resource Publication* 80 (1969).
91. DEES, L. T. 1970. Edible land snails in the United States. 8 pp.
Provides regulations, classification, and description of land snails. Discusses reproduction, foods and feeding, habitat, locomotion, behavior, predators, and control. Lists and describes nine species.
92. STEWART, R. E., AND H. A. KANTRUD. 1971. Classification of natural ponds and lakes in the Glaciated Prairie region. 57 pp.
Describes and explains a classification system and its application. Compares this system with that of Martin, et al., 1953. Lists characteristic plant species in prairie ponds and lakes. Provides representative photographs of all classes and some cover types of the system.
93. HOTCHKISS, N. 1970. Common marsh plants of the United States and Canada. 99 pp.
Describes the emergent and semi-emergent plants most likely to be found in inland and coastal marshes. Omits hundreds of uncommon marsh plants and plants less characteristic of marshes than of marsh edges, lake and stream shores, or wet meadows. All plants are described and illustrated.
94. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1971. Wildlife Research: problems, programs, progress, 1969. 104 pp.
Updates *Resource Publication* 85 (1970).
95. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1972. National survey of fishing and hunting, 1970. 108 pp.
Presents the results of the 1970 fishing and hunting survey in graphs and in tables. Includes numbers and characteristics of hunters and anglers, expenditures, number of recreation days, number of trips, and miles traveled.
96. BROOKS, J. W., J. C. BARTONEK, D. R. KLEIN, D. L. SPENCER, AND A. S. THAYER. 1971. Environmental influences of oil and gas development in the Arctic Slope and Beaufort Sea. 24 pp.
Describes the environmental characteristics and renewable resources of the Alaskan Arctic Slope and the Beaufort Sea in relation to oil and gas development. Problems associated with industrial activities are identified, and recommendations for avoiding or minimizing environmental and resource damage are advanced. It is noted that the simplicity of the ecosystems, the slow rate of organic processes, and the presence of permafrost create unique problems in connection with pollution, waste disposal, restoration of vegetation, and all activities that disturb the vegetated surface.
97. BUREAU OF SPORT FISHERIES AND WILDLIFE. n.d. National Wildlife Refuges, 1970. 16 pp.
Provides the objectives of the National Wildlife Refuge system and discusses some general aspects of the system.
98. SMITH, A. G. 1971. Ecological factors affecting waterfowl production in the Alberta Parklands. 49 pp.
Describes the study area and the methods and techniques of classification, vegetation sampling, and analysis; and breeding pair, brood, and nest censuses. Discusses habitat and vegetation, and land use and environmental changes. Discusses and provides data for breeding populations, nesting, and production.
99. STOUDET, J. H. 1971. Ecological factors affecting waterfowl production in the Saskatchewan Parklands. 53 pp.
Describes the study area and the methods and techniques of classification, vegetation sampling, and analysis; and breeding pair, brood, and nest censuses. Discusses habitat and vegetation, and land use and environmental changes. Discusses and provides data for breeding populations, nesting, and production.
100. MEANLEY, B. 1971. Blackbirds and the southern rice crop. 64 pp.
Describes the southern rice and rice-eating blackbirds: brown-headed cowbird (*Molothrus ater*), common grackle (*Quiscalus quiscula*), red-winged blackbird (*Agelaius phoeniceus*), and boat-tailed grackle (*Quiscalus major*). Covers bird migration and movements, and seasonal numbers, nesting, feeding, roosts, and foods. Discusses crop depredations and provides control methods: 1) cultural practices, 2) scaring, 3) chemical repellents, and 4) reducing populations.
101. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1971. Division of Fishery Services, annual report for 1970. 28 pp.
Discusses Division of Fisheries objectives and programs. Summarizes by tables the fishery services provided on Federal areas, Indian Reservations, State-Federal cooperative areas, other public waters, and private waters. Includes data on acres

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- of habitat and miles of stream reclaimed or improved, pounds and numbers of hatchery fish, and man-days of fishing.
102. GAUDET, J. L., EDITOR. 1971. Report of the 1970 workshop on fish feed technology and nutrition. 207 pp.
Presents papers from three sections at the workshop: 1) fish food processing, 2) fish culture techniques, and 3) fish nutrition. [In English and French]
 103. KINNEY, E. C., AND R. S. WYDOSKI. 1971. Cooperative Fishery Unit report for the 1970-71 school year. 50 pp.
Updates *Resource Publication* 90 (1970).
 104. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1972. Wildlife research: problems, programs, progress 1970. 98 pp.
Updates *Resource Publication* 94 (1971).
 105. ANDERSON, D. R., AND C. J. HENNY. 1972. Population ecology of the mallard: I. A review of previous studies and the distribution and migration from breeding areas. 166 pp.
Provides background information, including a review of the history of waterfowl management and a résumé of previous studies of the mallard (*Anas platyrhynchos*). The breeding range of the mallard was subdivided into 16 major and 44 minor reference areas. Each area is discussed in terms of habitat type, quantity of data available, importance to the continental mallard population, and previous waterfowl studies conducted within it. Locations and temporal distributions of band recoveries from mallards banded in each breeding area are presented on maps and in tables. Possible biases in using band recovery distributions for harvest distributions are outlined. Detailed tabulations of the locations of recoveries from bandings in each minor reference area are presented in an appendix.
 106. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1970. Progress in sport fishery research, 1970. 318 pp.
Reports progress by the Division of Fishery Research in the following research areas: pest control, fish husbandry, and oceanic and reservoir ecosystems. Lists 1970 technical communications.
 107. WHEELER, R. H., AND J. C. LEWIS. 1972. Trapping techniques for sandhill crane studies in the Platte River Valley. 19 pp.
Presents the results of a 1965-68 study of sandhill crane (*Grus canadensis*) trapping techniques. Discusses distribution and populations, habitat and behavior, development of capture techniques, trapping results, and band recoveries.
 108. TOMLINSON, R. E. 1972. Review of literature on the endangered masked bobwhite. 28 pp.
Describes the masked bobwhite (*Colinus virginianus ridgwayi*), its discovery, and distribution. Discusses life history, habitat, food habits, reason for decline, and attempts at reintroduction and preservation.
 109. FORTENBERY, D. K. 1972. Characteristics of the black-footed ferret. 8 pp.
Briefly discusses black-footed ferret (*Mustela nigripes*) numbers, distribution, identification, life history, and habits. Describes ferret signs and how to find ferrets.
 110. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1971. Division of Fishery Services, annual report for 1971. 15 pp.
Describes Division of Fishery Services objectives and programs. Summarizes by table activities in all areas, including Federal areas and Indian Reservations. Presents some data by region. Updates *Resource Publication* 101 (1971).
 111. HARRIS, V. T. 1972. Wildlife research 1971: problems, programs, progress. 106 pp.
Updates *Resource Publication* 85 (1970).
 112. KINNEY, E. C. 1972. Cooperative Fishery Unit report for the 1971-72 school year. 80 pp.
Summarizes the Cooperative Fishery Unit programs in 25 States. Presents abstracts of completed theses from each unit.
 113. MEYER, F. P., K. E. SNEED, AND P. H. ESCHMEYER, EDITORS. 1973. Second report to the fish farmers. 123 pp.
Presents an account of production and farming of food fish, bait fish, sport fish, and crayfish. Explains techniques, pertinent research, effects of research on fish farming, and future research needs. Provides a publication list. Updates *Resource Publication* 83 (1970).
 114. OFFICE OF ENDANGERED SPECIES AND INTERNATIONAL ACTIVITIES. 1973. Threatened wildlife of the United States. 239 pp.
Data include: 1) distinguishing characteristics; 2) present (1973) and former distributions; 3) status and estimated numbers; 4) fecundity; 5) reasons for decline; 6) protective measures, present and future; 7) number in captivity; and 8) culture or breeding potential in captivity. Also provides references for each species.
 115. POSPAHALA, R. S., D. R. ANDERSON, AND C. J. HENNY. 1974. Population ecology of the mallard: II. Breeding habitat conditions, size of the breeding populations, and production indices. 73 pp.

- Provides information on mallard (*Anas platyrhynchos*) breeding habitat, size and distribution of breeding populations, and indices to production. The information is primarily the result of large-scale aerial surveys conducted during May and July, 1955-73. The history of conflict in resource use between agriculturalists and wildlife conservation interests in primary waterfowl breeding grounds is reviewed. The number of ponds present during the breeding season and the midsummer period and the effects of precipitation and temperature on those ponds are analyzed in detail.
116. GOLET, F. C., AND J. S. LARSON. 1974. Classification of freshwater wetlands in the glaciated Northeast. 56 pp.
Presents a classification system based on maximum wetland wildlife production and diversity. Describes life forms and subforms. Discusses wetland size, cover, interspersions, and surrounding habitat types, and includes additional descriptions. Mentions application of the system, and includes photographs of each class-subclass combination.
 117. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1973. Wildlife Research Center, Denver, Colorado. Unpaged.
Brochure; briefly describes Denver Wildlife Research Center programs, including international activities, pesticides and environmental pollutants, coyote (*Canis latrans*) concerns, and animal control research.
 118. STEPHENS, R. F. 1973. Division of Fishery Services, 1972 annual report. 28 pp.
Briefly describes Division of Fishery Services objectives and programs on Federal lands, Indian Reservations, and Federal-State cooperative areas. Includes information on Cooperative Fishery Units, and in particular discusses sea lamprey (*Petromyzon marinus*) control in the Great Lakes. Rare and endangered fishes, environmental monitoring, and field appraisals are also mentioned.
 119. ANDERSON, D. R., P. A. SKAPTASON, K. C. FAHEY, AND C. J. HENNY. 1974. Population ecology of the mallard: III. Bibliography of published research and management findings. 46 pp.
Presents a bibliography of the following aspects of mallards (*Anas platyrhynchos*): 1) population ecology, 2) behavior, 3) genetics, 4) food and food habits, 5) habitat, 6) censuses and surveys, 7) pesticide research, 8) lead poisoning, and 9) disease.
 120. ESCHMEYER, P. H., AND V. T. HARRIS. 1974. Bibliography of research publications of the U.S. Bureau of Sport Fisheries and Wildlife, 1928-1972. 154 pp.
 121. BUREAU OF SPORT FISHERIES AND WILDLIFE. 1973. Progress in Sport Fishery Research, 1971. 157 pp.
Reports progress by the Division of Fishery Research in the following research areas: pest control, fish husbandry, and oceanic and reservoir ecosystems. Includes a list of 1973 technical communications.
 122. McDONALD, M. E. 1974. Key to nematodes reported in waterfowl. 44 pp.
Provides a checklist of nematodes, a key to their families and genera, a guide to species identification, a key to species found in waterfowl, and a list of anatomical habitat of genera. Includes a reference list.
 123. PHENICIE, C. K., AND J. R. LYONS. 1973. Tactical planning in fish and wildlife management and research. 19 pp.
Tactical objectives are identified and stated through a step-down plan, in which the appropriate activities for scheduling and management control are identified, and the need for experimental design in research is isolated.
 124. NETSCH, N. F. 1975. Fishery resources of waters along the route of the trans-Alaska pipeline between Yukon River and Atigun Pass in North Central Alaska. 45 pp.
Fishery resources along a 185-mile segment of the trans-Alaska pipeline route between the Yukon River and Atigun Pass are described. Arctic grayling (*Thymallus arcticus*), slimy sculpin (*Cottus cognatus*), and round whitefish (*Prosopium cylindraceum*) were most common. Intensive mark and recapture studies were conducted on Jim River, Prospect Creek, and stream HR2-1405+92 in 1972. The number of fish and their movements are discussed.
 125. ANDERSON, D. R. 1975. Population ecology of the mallard: V. Temporal and geographic estimates of survival, recovery, and harvest rates. 110 pp.
Estimates of survival, recovery, and harvest rates of mallards (*Anas platyrhynchos*) banded before the hunting season are analyzed. Annual estimates of survival, recovery and harvest rates, and their sampling variances are summarized for each age and sex in the appendix.
 126. BRAUN, C. E., D. E. BROWN, J. C. PETERSON, AND T. P. ZAPATKA. 1975. Results of the Four Corners cooperative band-tailed pigeon investigation. 20 pp.
Provides the results of intensive studies conducted from June 1967 through October 1972 of band-tailed pigeons (*Columba fasciata*) breeding in the Four Corners States of Arizona, Colorado, New Mexico, and Utah. Discusses distribution, habitat, trapping and banding, migration patterns and chronology, mortality and survival, hunting, age composition of harvest, and crop gland development. Evaluates hunting and its impacts.

127. MEYER, F. P., AND G. L. HOFFMAN. 1976. Parasites and diseases of warmwater fishes. 20 pp. Briefly describes and discusses freshwater fish diseases and how to diagnose them.
128. ANDERSON, D. R., AND K. P. BURNHAM. 1976. Population ecology of the mallard: VI. The effect of exploitation on survival. 66 pp. Describes two hypotheses—hunting as additive or as compensatory mortality—and reviews laboratory and field studies supporting each hypothesis. Discusses invalid methods still in use and modern methods for testing these hypotheses. Results include: 1) time-varying survival rates, 2) survival in years of liberal and restrictive hunting regulations, 3) tests of additive versus compensatory mortality, 4) survival versus harvest rates, and 5) simulation studies. Discusses the implications of these results and future research needs.
129. BERGMAN, R. D., R. L. HOWARD, K. F. ABRAHAM, AND M. W. WELLER. 1977. Water birds and their wetland resources in relation to oil development at Storkersen Point, Alaska. 38 pp. Presents the results of a 5-year study of the bird populations at Storkersen Point on the Alaska Coastal Plain. To provide insight into habitat use and to devise systems for protecting key habitats, wetlands were classified on the basis of size, depth, vegetation, and water chemistry. The resulting eight classes were then related to bird use. To determine factors influencing differential use of classes of wetlands, and to provide a basis for understanding the food relations and the problems of pollution of wetlands, invertebrate populations were examined in major freshwater wetlands. Recommendations for preservation of the tundra are made.
130. MARTIN, E. M., AND S. M. CARNEY. 1977. Population ecology of the mallard: IV. A review of duck hunting regulations, activity, and success, with special reference to the mallard. 137 pp. Deals at length with the harvest of mallards (*Anas platyrhynchos*) by waterfowl hunters. Long-term summaries of duck hunting regulations (1948–1974), Migratory Bird Hunting Stamp sales (1934–1974), Hunter Questionnaire (1952–1974), Duck Wing Collection (1960–1974), and Hunter Performance (1965–1972) Survey data for the United States are presented and discussed. Similar data from Canada are also summarized. Mallard harvest figures for 1961–1974 are presented by Mallard Harvest Area, of which 100 are defined for the United States and 14 for Canada, as well as by State or Province and flyway. Age and sex compositions and the chronological distribution of the mallard harvest are examined in detail. Relations between duck hunting regulations and harvest and hunter behavior are examined briefly. A procedure for calculating expected hunter success under a wide variety of bag limit regulations is developed.
131. BROWNIE, C., D. R. ANDERSON, K. P. BURNHAM, AND D. S. ROBSON. 1978. Statistical inference from band recovery data—a handbook. 212 pp. Presents a discussion of modern methods for the detailed analysis of certain types of marking studies of animal populations. The discussion and examples focus on birdbanding studies, which are a common and important application and permit a consistent terminology. The estimation methods and statistical testing procedures presented are potentially applicable to fish tagging experiments, entomological investigations, and studies of certain reptiles and amphibians. Presents and evaluates 14 models.
132. FLOOD, B. S., M. E. SONGSTER, R. D. SPAROWE, AND T. S. BASKETT. 1977. A handbook for habitat evaluation procedures. 77 pp. The habitat requirements, preferred foods, cavity-forming trees (if applicable), references, and field forms for each habitat type are provided for: 1) forest game; 2) upland game; 3) tree squirrels; 4) terrestrial furbearers; 5) aquatic furbearers; and 6) waterfowl. All data and species listed are specifically for the Meramec Park Lake project in Crawford County, Missouri.
133. BASKETT, T. S., D. A. DARROW, D. L. HALLETT, M. J. ARMBRUSTER, J. A. ELLIS, B. F. SPAROWE, AND P. A. KORTE, EDITORS. 1980. A handbook for terrestrial habitat evaluation in central Missouri. 155 pp. Follows the format of *Resource Publication* 132, but differs as follows: 1) the project area includes 11 counties in central Missouri, rather than the Meramec River basin; 2) evaluation elements are individual species instead of combinations of species; 3) evaluation elements now include nongame mammals and birds; 4) evaluation criteria are less subjective in the new handbook; 5) instead of field estimates, use of aerial photographs for certain criteria (e.g., distance to water) is suggested; and (6) habitat types are classified somewhat differently.
134. BURY, R. B., C. K. DODD, JR., AND G. M. FELLERS. 1980. Conservation of the amphibia of the United States: a review. 34 pp. The conservation status of 39 species and subspecies of amphibians is assessed. Provides a brief description, geographic range (including a map), habitat, status, and recommendations for protection of each amphibian. The information is based on literature, personal communications, and field work.
135. WYDOSKI, R. S., K. GILBERT, K. SEETHALER, C. W. MCADA, AND J. A. WYDOSKI. 1980. Annotated bibliography for aquatic resource management of the Upper Colorado River ecosystem. 186 pp.

136. DOLBEER, R. A. 1980. Blackbirds and corn in Ohio. 18 pp.
Describes the status of the red-winged blackbird (*Agelaius phoeniceus*) and the common grackle (*Quiscalus quiscula*) and discusses their depredation on corn. Presents the legal status of blackbirds in Ohio, and discusses population management and an integrated management program for farmers. Makes management recommendations and provides sources of services and information.
137. JOHNSON, W. W., AND M. T. FINLEY. 1980. Handbook of acute toxicity of chemicals to fish and aquatic invertebrates. 98 pp.
Compiles results from toxicity tests on fish and aquatic invertebrates conducted at Columbia National Fisheries Research Laboratory in 1965-78. Studies include 1,587 acute toxicity tests on 271 chemicals against 28 species of fish and 30 species of invertebrates.
138. SAUNDERS, G. B., AND D. C. SAUNDERS. 1981. Waterfowl and their wintering grounds in Mexico, 1937-64. 151 pp.
Describes waterfowl wintering areas of Mexico. Discusses the yearly winter habitat conditions and waterfowl use for 1945-64 for the Gulf and Caribbean zone, the interior Highland zone, and the Pacific Coast zone. Presents migration, winter distribution, foods, habitats, band recoveries, and hunting mortality data for each waterfowl species encountered in Mexico.
139. BIRKENSTEIN, L. R., AND R. E. TOMLINSON. 1981. Native names of Mexican birds. 159 pp.
Includes English and Spanish common names.
140. GILMER, D. S., L. M. COWARDIN, R. L. DUVAL, L. M. MECHLIN, C. W. SHAIFFER, AND V. B. KUECHLE. 1981. Procedures for the use of aircraft in wildlife biotelemetry studies. 19 pp.
Airplane and helicopter antenna attachments are described. The performance of the receiving antenna system is discussed, with emphasis on how variables in aircraft type and antenna configuration may influence reception. Characteristics of receivers, transmitters, and antennas that might influence tracking are discussed. Specific topics such as calibration of receivers and transmitter quality control are considered. Suggestions in preparing for and conducting tracking flights that will improve overall efficiency and safety are presented. Search techniques, including procedures for conducting large and specific area surveys as well as methods to improve and evaluate search efficiency, are discussed. Considers special topics such as low-level operations and use of helicopters. Diagrams of antenna mounts, equipment check-off lists, and antenna test procedures are included as appendices.
141. DERKSEN, D. V., T. C. ROTHE, AND W. D. ELDRIDGE. 1981. Use of wetland habitats by birds in the National Petroleum Reserve—Alaska. 27 pp.
Distribution, abundance, and use of wetland habitats by migratory birds were studied at two interior and three outer Arctic Coastal Plain sites in the National Petroleum Reserve in Alaska (NPR-A) in 1977 and 1978. Comparative data were collected in the same years from a Beaufort Sea coastal site near Prudhoe Bay. Data include species composition and seasonal fluctuations in population densities. Makes recommendations for petroleum and production activities onshore and in the Beaufort and Chukchi seas.
142. McDONALD, M. E. 1981. Key to trematodes reported in waterfowl. 156 pp.
Provides a checklist of trematodes, a list of the anatomical habitat of genera, a key to families and genera, a guide to identification of species, and keys to species found in waterfowl.
143. GREENHALL, A. M. 1982. House bat management. 33 pp.
Discusses the biology and ecology of insectivorous bats, and reviews nuisance problems, species causing them, and health hazards. Describes batproofing techniques that will provide effective and acceptable alternatives for dealing with house bat problems and hazards. Makes management recommendations and mentions future research needs.
144. FAANES, C. A. 1982. Avian use of Sheyenne Lake and associated habitats in central North Dakota. 24 pp.
A study of avian use of various habitats was conducted in the Sheyenne Lake region of central North Dakota during April-June 1980. Population counts of birds were made in wetlands of various classes, prairie thickets, upland native prairie, shelterbelts, and cropland. Data on dates of occurrence, nesting records, and habitat use are presented for the 175 species recorded in 1980. Observations of significance by refuge staff are also provided.
145. FRITTS, S. H. 1982. Wolf depredation on livestock in Minnesota. 11 pp.
Reviews wolf depredation, history of control programs, and problems in verification of gray wolf (*Canis lupus*) depredation. The 1979-80 approach to control and its results are discussed. The objective of this program was to reduce livestock losses while minimizing the number of wolves taken.
146. ANDERSON, S. H. 1982. Effects of the 1976 Seney National Wildlife Refuge wildfire on wildlife and wildlife habitats. 28 pp.
Discusses the fire pattern and intensity; structural changes that occurred in habitat; and changes in abundance and species of birds, mammals, amphibians, reptiles, and fish.

147. MUNRO, R. E., AND C. F. KIMBALL. 1982. Population ecology of the mallard: VII. Distribution and derivation of the harvest. 127 pp.
Banding records for 1961-1975 were used, together with information from previous reports in this series, to estimate annual and average pre-season age and sex structure of the mallard (*Anas platyrhynchos*) population and patterns of harvest distribution and derivation. Distribution of the mallard harvest from 16 major breeding ground reference areas to States, Provinces, and flyways is tabulated and illustrated. Seasonal (weekly) breeding ground derivation of the harvest within States and Provinces from the 16 reference areas also is tabulated. Harvest distribution, derivation, and similarity of derivation between harvest areas are summarily illustrated with maps.
148. FREDRICKSON, L. H., AND T. S. TAYLOR. 1982. Management of seasonally flooded impoundments for wildlife. 29 pp.
Reviews the advantages and disadvantages of moist-soil management and presents development of moist-soil impoundments. Discusses management of seasonally flooded impoundments, water level manipulation for wildlife, and development of integrated management plans.
149. SCHNICK, R. A., J. M. MORTON, J. C. MOCHALSKI, AND J. T. BEALL. 1982. Mitigation and enhancement techniques for the Upper Mississippi River System and other large river systems. 714 pp.
Extensive information is provided on techniques that can reduce or eliminate the negative impact of man's activities (particularly those related to navigation) on large river systems, with special reference to the Upper Mississippi River. Discussions of each technique or group of techniques include 1) the situation to be mitigated or enhanced; 2) a description of technique; 3) impacts on the environment; 4) costs; and 5) an evaluation for use on the Upper Mississippi River System. The techniques are divided into four primary categories: bank stabilization techniques, dredging and disposal of dredged material, fishery management techniques, and wildlife management techniques.
150. YASUTAKE, W. T., AND J. H. WALES. 1983. Microscopic anatomy of salmonids: an atlas. 184 pp.
Includes 50 plates in black and white, supplemented by 12 in color, all with detailed captions. Many significant structures or areas are shown at high magnification. The text of each of the 13 chapters has generally been limited to introductory comments. A description of fixing procedures is provided.
151. FAANES, C. A., AND J. M. ANDREW. 1983. Avian use of forest habitats in the Pembina Hills of north-eastern North Dakota. 24 pp.
During 1981 the avifauna of the upper valley of the Pembina River in the Pembina Hills was studied. Field work extended from 20 April to 23 July; breeding bird censuses were conducted 7 June to 2 July. Data include species composition, breeding populations, breeding densities, and species diversity.
152. SCHMAT, C. J., M. A. RIBICK, J. L. LUDKE, AND T. W. MAY. 1983. National Pesticide Monitoring Program: organochlorine residues in freshwater fish, 1976-79.
The U.S. Fish and Wildlife Service measured organochlorine residues in 620 whole fish samples collected from 109 stations nationwide in 1976-79, as part of the National Pesticide Monitoring Program.
153. HUDSON, R. H., R. K. TUCKER, AND M. A. HAEGELE. 1984. Handbook of toxicity of pesticides to wildlife. 90 pp.
Updates *Resource Publication* 84 (1970).
154. SHAW, W. W., AND W. R. MANGUN. 1984. Nonconsumptive use of wildlife in the United States. 20 pp.
Sections of the 1980 *National Survey of Fishing, Hunting and Wildlife-Associated Recreation* that dealt with nonconsumptive uses of wildlife are analyzed. Data are based on 5,997 detailed personal interviews of Americans 16 years old and older who participated in some form of nonconsumptive use of wildlife. Represents the first detailed nationwide data base dealing with the characteristics of nonconsumptive users, the types of activities and wildlife involved, and the potential for development of new methods for funding nongame management.
155. BURY, R. B., AND J. A. WHELAN. 1984. Ecology and management of the bullfrog. 23 pp.
Summarizes and critically reviews information on the biology of the bullfrog (*Rana catesbeiana*) related to its ecology, present status, culture, and management. Includes recent, important biological and economic features of the bullfrog, as well as pertinent historical references.
156. BROWNIE, C., D. R. ANDERSON, K. P. BURNHAM, AND D. S. ROBSON. 1985. Statistical inference from band recovery data—a handbook. Second edition. 292 pp.
Presents a discussion of modern methods for the detailed analysis of certain types of marking studies of animal populations. The discussion and examples focus on birdbanding studies, which are a common and important application and permit a consistent terminology. The estimation methods and statistical testing procedures presented are potentially applicable to fish tagging experiments, entomological investigations, and studies of certain reptiles and amphibians. Presents and evaluates 14 models.